

Remarks

The undersigned's Remarks are preceded by related comments of the Examiner, presented in small bold-faced type.

Claims 1-25 rejected under 35 U.S.C. 102(b) as being anticipated by Qiang J1, Michael M. Marefat (hereinafter refers as "Qiang").

The Examiner's rejection of claims 1-25 is respectfully traversed.

Contrary to the Examiner's suggestion, Qiang does not teach or suggest the invention recited by the claims of the present application.

The undersigned respectfully submits that the Examiner's grounds for rejection appear to be based, at least in part, on an improper assertion that a "feature" as discussed in Qiang somehow relates to the "geometric cell" of the present invention. To be clear, and as further explained below, the two are not the same.

Applicant acknowledges that, generally speaking, Qiang teaches a system for the recognition of features as explained in its abstract or page 267, item 1.2. However, this is not what is claimed in the present application. The present application and claims are directed to quite a different invention – in particular, the claimed inventions are directed to a method and an apparatus to identify (e.g., in order to select) the geometric cells of a model. Geometric cells differ from features as explained at page 2 and the beginning of page 3 of the present application. Thus, the result of the present invention is not to recognize some features (as in Qiang) but rather the different result of identifying and selecting the geometric cells onto which some features will be applied. If, after the Examiner has reviewed the above-identified section of the present

application explaining differences between “features” and “cells”, the Examiner continues to believe that “features” and “cells” are somehow equivalent, it is respectfully requested that the Examiner contact the undersigned attorney and a telephone conference with the inventor will be arranged so that the distinctions between the two can be further explained.

Applicant further notes that the term “feature” as used in Qiang is understood to have a similar meaning to the term “feature” as used in the present application. See, for example, page 2, paragraph 3, of the application as filed and page 266 Item 1.1 (“Features”) of Qiang. It is respectfully submitted that since the term “feature” has a similar meaning in Qiang and the present application, and the present application used a different term “geometric cells” with the meaning set forth on page 2-3 of the present application, it should be clear that these terms are to be ascribed different meanings.

The present invention, and its operation on “cells” rather than “features” provides for the identification of cells that have certain characteristics in order, e.g., to apply a same feature on those identified cells. Claim 1 has been amended to further clarify this distinction.

Qiang, in contrast to the present application, is understood as being directed to the issue of how to recognize faces or edges of a model correspond to, e.g., a hole or a fillet (i.e., Qiang is directed to how to identify the features). As the foregoing explanation makes clear, what is recognized in Qiang (i.e., features) and what is recognized in the present application (i.e., cells) is quite different and the resulting effect of these different recognition capabilities is not the same.

For at least the foregoing reasons, claims 1-25 are patentable distinct from what is disclosed in Qiang and, accordingly, it is respectfully requested that the Examiner withdraw his

rejection and allow the claims. Additional arguments in support of the allowance of the claims of the present application are set forth below.

1. **Claims 1,3 5, 7,9, 11, 13, 15, 17-19, 21 and 23.**

Qiang on page 265, first col. teaches that occur at different life-cycle stages of a product. Computer-aided design (CAD), in general, refers to using computers to assist with the various functions in the design process. Engineers consider CAD data to be the data that represent a product or component: in the domain of mechanical components these are often represented as a set of engineering drawings or a solid model of a component, and see fig. 2 on page 268 and figs. 15, 22 that defines the specific geometric feature. Qiang on pages 266-267 teaches Features may also be classified as prismatic or rotational. The attributes associated with features may include dimension, orientation, tolerance, spatial relationship, and topologic components. That is similar to the following claim languages: "A computer system operation method for use with a CAD system in modeling objects, said method providing a means for identifying geometric cells of a model, each of said geometric cells comprising data defining a specific geometric feature with which it is associated the method comprising:"

As was further explained above and in the above-cited sections of the specification, when the terms "feature" and "geometric cells" are properly construed, it is clear that Qiang does not teach or suggest the processing of geometric cells.

Qiang on page 285, first col. teaches the following limitations: "receiving input comprising one or more constraints relating to geometric cell information;"

The Examiner's assertion that Qiang on page 285, first col. teaches the following limitations: "receiving input comprising one or more constraints relating to geometric cell information;" is respectfully traversed. The cited section of Qiang makes clear that what is being referenced are features, rather than geometric cells. Because the cited section of Qiang does not teach or suggest the referenced claim limitation, the Office has not met its burden of showing that the referenced claim limitation is shown in the prior art. Accordingly, it is respectfully submitted that an rejection under § 102(e) is not supported and the rejection should be withdrawn.

Qiang on page 274, first col. teaches In rule-based methods, rules attempt to specify a set of necessary and sufficient preconditions for the patterns found in a feature.

Recognition is carried out through an inference control mechanism that determines how to

apply these rules to the input data. That applies to the following limitations: " for each constraint and for each of a plurality of geometric cells of a model, processing a declarative syntax specifying at least one of said received input constraints to determine whether the cell meets the requirement of the constraint; and generating a list of geometric cells meeting the requirements of the constraints". Qiang on page 306, section 6.2 teaches in terms of input information requirements, B-Reps are currently the most popular geometric representation scheme in mechanisms for automatic recognition of features from design models. B-Rep provides a description of an object in terms of its surface and edge entities. These surface and edge entities encourage the use of pattern-matching techniques for feature recognition. However, these entities are also sensitive to feature interactions since interactions can significantly change the observed entities or their properties. The main advantages of this scheme are that it is unambiguous and unique (ignoring changes in tessellation) and that both the volumetric and pattern-matching techniques can easily use it.

It is respectfully submitted that the Examiner's grounds for rejection are unclear and do not meet the standards of MPEP § 707.07 which states:

707.07 Completeness and Clarity of Examiner's Action

37 CFR 1.104. Nature of examination.

- (b) *Completeness of examiner's action.* The examiner's action will be complete as to all matters, except that in appropriate circumstances, such as misjoinder of invention, fundamental defects in the application, and the like, the action of the examiner may be limited to such matters before further action is made. However, matters of form need not be raised by the examiner until a claim is found allowable.

By way of example, although the Examiner has rejected each of claims 3, 5, 7, 9, 11, 13, 15, 17-19, 21 and 23, the Examiner's comments appear limited to the limitations of claim 1. It is respectfully submitted that this does not provide sufficient information to enable the undersigned to understand the basis for rejection of each claim. For example, while claims 3, 5, and 7 are similar to claim 1, the limitations of claim 9 are set forth differing details and it is not clear how each of these limitations are found in Qiang. For example, with respect to Claim 9, the following questions remain unanswered by the present Office Action:

1. With regard to limitation (a), where in Qiang is the receiving of input comprising one or more constraints relating to geometric cell information shown?

2. With regard to limitation (b), where in Qiang is the selecting of the first constraint of said input shown?
3. With regard to limitation (b), where in Qiang is the identifying of the components of the CAD system that must be accessed to find geometric cells shown?
4. With regard to limitation (b), what are the “components” that Qiang shows being identified?
5. With regard to limitation (b), how does Qiang show that the “components” must be accessed to find geometric cells meeting the requirements of the constraint?
6. With regard to limitation (b), how does Qiang show meeting the requirements of the constraint?
7. With regard to limitation (c), how does Qiang show searching the cells of the model?
8. With regard to limitation (c), where does Qiang show retaining as a subset only the cells that meet the requirement of the first constraint of said input?
9. With regard to limitation (d), where does Qiang show selecting the next constraint of said input and identifying the components of the CAD system that must be accessed to find geometric cells meeting the requirements of said next constraint?
10. With regard to limitation (e), where does Qiang show searching the subset of cells and retaining in the subset only the cells that meet the requirement of said next constraint of said input?
11. With regard to limitation (f), where does Qiang show repeating steps d) and e) for each of the remaining constraints in said input?

The MPEP makes clear that the Office Action must be sufficiently clear for the undersigned to understand the answers to each of these questions. See, e.g., MPEP 707.07(a) and MPEP 707.07(g). It is respectfully submitted that the present Action is does not provide the requisite clarity. Nevertheless, in light of the above-provided distinctions between “features” and “cells” it is respectfully submitted that this issue may be moot in light of the fact that the claims appear allowable over the prior art. However, in the event that the Examiner does not now allow

the claims, it is respectfully requested that the Examiner withdraw the rejection and issue a new non-final Office Action complete as to each of the rejected claims.

2. Claims 2, 4, 6, 8, 10, 12, 14, 16, 20, 22, 24 and 25 [Are Rejected]

The Examiner's rejection of claims 2, 4, 6, 8, 10, 12, 14, 16, 20, 22, 24 and 25 is respectfully traversed. However, as these claims depend, directly or indirectly, from a independent base claim which is believed allowable for reasons set for the above, the Examiner's statement regarding rejection of these claims is not addressed at this time.

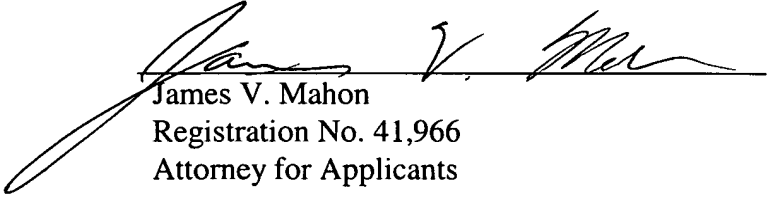
Conclusions

Claims 1-25 are now pending and believed to be in condition for allowance. Applicant respectfully requests that all pending claims be allowed.

Please apply any credits or excess charges to our deposit account number 50-0521.

Respectfully submitted,

Date: Oct 26, 2005


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